

## **REMARKS**

The Examiner provides a number of rejections and we list them here in the order in which they are addressed:

- I. Claims 1-30 Are Rejected Under 35 USC § 103(a)
  - A. Claims 1-8, 10-22, 24-30 are allegedly unpatentable over United States Patent 6,575,188 to Parunak.
  - B. Claims 9 & 23 are allegedly unpatentably over Parunak as applied to Claim 1.
- II. The Applicants' Specification is objected to for allegedly containing spelling and grammatical errors.

### **I. The Claims Are Not *Prima Facie* Obvious Over Parunak**

The Examiner cites United States Patent 6,575,188 To Parunak as a single reference in support of an obviousness rejection. The Applicants argue that the Examiner has not presented a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference(s) themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ.2d 1438 (Fed. Cir. 1991); and *MPEP* § 2142; Establishing A *Prima Facie* Case Of Obviousness. The Examiner is reminded that if ONLY ONE of the above requirements is not met, then a *prima facie* case of obviousness does not exist. The Applicants submit that the Examiner's rejection does not meet these criteria. The Applicants rebut the establishment of a *prima facie* case of obviousness by the argument below.

Nonetheless, without acquiescing to the Examiner's argument but to further the prosecution, and hereby expressly reserving the right to prosecute the original (or similar) claims, Applicants have added new Claims 31 – 36 that represents the Applicants' originally claimed embodiment with added clarity while concomitantly canceling Claims 1-6 and 12-28. The Examiner is also requested to note that Claims 7-11 and 29-30 have been amended to either update proper dependency or improve clarity. These amendments are made not to acquiesce to

the Examiner's argument but only to further the Applicants' business interests, better define one embodiment and expedite the prosecution of this application.

The Examiner is requested to view the arguments below in reference to the new and amended claims.

**A. Claims 1-8, 10-22, And 24-30 Are Not Obvious**

**1. Parunak Does Not Teach All the Elements**

The Examiner states that Parunak:

... discloses a device (50) that provides ... a second heater element (37) ...  
wherein the inlet port is linked to a gas source (32 and 34)(col 4 lines 26-35) ...

*Office Action pg 2.* The Applicants disagree. First, the Examiner refers to “a second heater element (37)” without identifying any “first heater element”. The Applicants point out that Parunak’s teachings do not disclose any device having a first and second heater element. Further, the Examiner apparently misunderstands Parunak to allegedly teach “...a third heater element (37)”. *Office Action pg 3.* Parunak does not disclose any embodiment having more than one heater element. In fact, the Examiner has inappropriately referred to a heater element 37 or heater element 37’ as either a second heater element (*Office Action pg 2*) or a third heater element (*Office Action pg 3*). Parunak’s Figures 2a & 2b refer to a “multi-use valve 50” that contains only a first heater 37. Parunak’s Figures 4a & 4b refer to a “gate-type valve 50’ ” that also contains only a first heater 37’. All other Parunak embodiments are variations of either the multi-use valve 50 or a gate-type valve 50’, none of which contain more than one heater element.

Second, the Examiner asserts above that Parunak teaches an “inlet port ... linked to a gas source” but then contradicts this position by admitting that “Parunak discloses all the claimed features of the invention except that the [Applicants’] device has an inlet port in fluidic communication with a first micro channel ...” *Office Action pg. 3.* Parunak does not teach an “inlet port linked to a gas source”. The Examiner erroneously cites col 4 lines 26-35 for support and the Applicants point out below that this passage teaches that Parunak’s “gas source” is not linked to anything:

The valve opening operation preferably includes actuating a heat source 37 to heat TRS 56 thereby modifying a physical or chemical property thereof, such as by making TRS 56 softer. A cooler 36 cools a gas 34 trapped in contact with an end 30 of TRS 56. The resulting contraction of gas 32 decreases the pressure acting upon end 30 and retracts the softened TRS 56 into reservoir 55. To close valve 50, gas 32 is heated, which expands

the gas thereby increasing the pressure acting upon end 30 and extending TRS 56 across passage 68.

*Parunak col 4 ln 26-35* [emphasis added]. Clearly, Parunak is relying upon changing the pressure of a constant gas volume by alternatively using either a cooling and/or a heating source to open or close the valve.

Because Parunak does not teach all the Applicants' claimed elements the Examiner is respectfully requested to withdraw the rejection.

**2. No Motivation To Modify Parunak Is Presented**

The Examiner has put forward only a single reference on which to support an obviousness rejection. The Examiner, therefore, tacitly admits that Parunak is not an anticipatory reference (i.e., it does not teach each and every element of the Applicants' claimed embodiment). Consequently, to create a *prima facie* case of obviousness the Examiner must find, within the general knowledge of those having ordinary skill in the art, the missing elements that would create the Applicants' claimed embodiment. Here, the Examiner has failed to present any extrinsic evidence that suggests Parunak should be modified.

In addition to that presented above, the Examiner further admits that Parunak's "multi-use valve" embodiment does not teach:

- i) a first heater element associated with an inlet port;
- ii) a third heater element associated with a main channel;
- iii) loading a meltable material at the inlet port; and
- iv) firing a first heater element to at least partially melt and create a melted plug.

*Office Action pg 3.* The Examiner then attempts to combine two unrelated teachings within Parunak to create the Applicant's claimed embodiment that allegedly fulfills the above admitted deficiencies:

Parunak in another embodiment ... disclose the device has an inlet port (40) in fluidic communication with a first micro channel as seen in Fig. 4a, also that the first heater element is associated with the inlet port (col. 8 lines 3-10) ...

*Office Action pg. 3.* The Examiner has apparently not closely read Parunak to understand that the "multi-use valve" teachings (See Parunak Figs 2a, 2b; valve 50) and "inlet port valve" teachings (See Parunak Figs. 4a, 4b; valve 50') are not intended by the inventor for combination:

Thus, a valve of type 50' is a gate-type valve as distinguished from a valve 50 in which material retracts into a reservoir to open the valve.

*Parunak col 7 ln 38-40*. The Examiner is reminded that - under the law - an Examiner is NOT one skilled in the art; mere opinion of the Examiner on what one skilled in the art might believe does not count. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) ("[T]he examiner's assumptions do not constitute the disclosure of the prior art."). Here, Parunak clearly states that valve 50 and valve 50' are different, and the Examiner is not permitted to arbitrarily suggest that any specific elements from either embodiment should be, or could be, combined together.

Because, Parunak does not contain any suggestions or motivation to combine any elements to create the Applicant's claimed embodiment, the Examiner is respectfully requested to withdraw this rejection.

**3. Parunak Does Not Provide Any Reasonable Expectation Of Success**

Even if the Examiner was justified in combining elements between Parunak's "multi-use valve" and "gated-type valve" (which is not justified), Parunak does not contain any explicit statements that such a combination would, in fact, work. These types of statements are maintained as mandatory by the Federal Circuit to meet the "reasonable expectation of success" obviousness prong:

The expectation of success must come from the prior art and explicitly predict that the process recited in the claims would work.

*In re O'Farrell*, 853 F.2d 894, 7 USPQ2d 1673 (Fed. Cir. 1988). The Examiner has not, and cannot, point to anything within Parunak that fulfills this requirement.

Consequently, the Applicants respectfully requests that the Examiner withdraw this rejection.

**B. Claims 9 And 23 Are Not Obvious**

The Applicants rely upon the arguments presented above and submit that the new independent Claim 31 is not obvious. Consequently, all dependent claims to Claim 31 are also not obvious. Further, the Applicants remind the Examiner that Claim 23 was canceled above for other reasons. Consequently, the Applicants respectfully request the Examiner to withdraw this rejection.

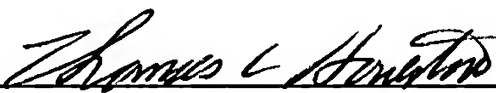
**II. A Substitute Specification Is Provided**

The Examiner states that “The disclosure is objected to because of numerous spelling and grammatical errors. ... Appropriate correction is required”. *Office Action* pg. 2. The Applicants have elected to provide a Substitute Specification containing numerous corrections of both spelling and grammar. The Applicants believe that no new matter has been introduced into the specification as a result of these corrections.

**CONCLUSION**

The Applicants believe that the arguments and claim amendments set forth above traverse the Examiner's rejections and, therefore, request that all grounds for rejection be withdrawn for the reasons set above. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, the Applicants encourage the Examiner to call the undersigned collect at 617.984.0616.

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